Stanislaus County
Department of Environmental Resources
3800 Cornucopia Way, Suite C
Modesto, California 95358

Mass Calculations

Former GC & SP Trucking Facility
2006 L Street
Newman, California
ATC Project No. 54.24614.0001

Prepared on Behalf of:

Mr. William Cerutti
26118 McClintock Road
Newman, California 95360

March 1, 2006

March 1, 2006
54.24614.0001

Ms. Vicki Jones
Stanislaus County Department of Environmental Resources
3800 Cornucopia Way, Suite C
Modesto, California 95358

Subject: Mass Calculations, Former GC & SP Trucking Facility, 2006 L Street, Newman, California

Dear Ms. Jones:

ATC Associates Inc. has performed mass of calculations for the above referenced site. The attached report summarizes our findings. Based on the results, ATC recommends no further action at the subject site.

If you should have any questions or comments regarding this report or our recommendations, please feel free to call us at your convenience at (209) 579-2221.

Respectfully submitted,
ATC Associates Inc.

Nathan Christman
Staff Geologist

Jeanne Homsey, P.E.
CA Professional Engineer No. 47410

cc: Mr. Chuck Betty
Mr. William Cerutti
Mr. Hurd Barrington
Mr. Timothy Snoke
Mr. Michael Smith, RWQCB

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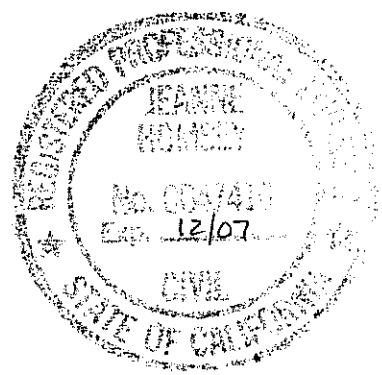

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1.0 INTRODUCTION

ATC Associates Inc. (ATC) has prepared this report on behalf of Mr. William Cerutti of Newman Investments to estimate the total mass of soil impacted by petroleum hydrocarbons, at the Former GC & SP Trucking Facility (Figure 1). The purpose of performing the mass calculations was to estimate the mass of impacted soils beneath the site. The findings of the mass calculations are summarized in the following report.

1.1 Site Location

The site is located at 2006 L Street in Newman, California, as shown on Figure 1. Principal land use in the vicinity of the site consists of industrial properties. The site is currently occupied by a welding and machine shop.

1.2 Background

In approximately 1993, a site observation well was installed at the site. The well is approximately twelve feet in depth and twelve inches in diameter made of PVC plastic with no perforated or screened interval. The well was installed at the direction of the Stanislaus County Department of Environmental Resources. No testing or environmental sampling has ever been conducted since the well has historically been dry.

In March 1994, two underground storage tanks (USTs) were removed from the site. The tanks were reported to have stored diesel fuel. A total of five soil samples were collected from the soil surrounding and beneath the tanks. Total petroleum hydrocarbons as diesel (TPHd), toluene, ethyl benzene, and xylenes were detected in soil samples collected near the southern portion of the UST excavation area (Figure 2).

From May 17 to June 15, 1994, additional soil was excavated south of the USTs. A total of three soil samples and one groundwater sample were collected from the additional excavation pit. TPHd was detected in the soil sample collected from the south wall of the additional excavation pit.

In October 2005, ATC advanced five Geoprobe® soil borings (GP1 through GP5) to a depth of 16 feet bgs in the vicinity of the former USTs to evaluate potential petroleum hydrocarbon

impacts to soil and groundwater. TPHd was detected once in the soil sample collected from GP4 at an approximate depth of 8 feet bgs. None of the remaining analytes of interest were detected in the soil and groundwater samples collected from GP1 through GP5. Additionally ATC collected a groundwater sample from the existing monitoring well located on site. None of the analytes of interest were detected in the water sample collected from this well. Details of the subsurface investigation are summarized in the ATC report entitled *Summary Report of Subsurface Investigation, Former GC & SP Trucking Facility, 2006 L Street, Newman, California* dated January 6, 2006.

2.0 MASS CALCULATION

ATC performed calculations to estimate the mass of TPHd remaining in the subsurface soils at the site. TPHd was detected once at a concentration of 13 milligrams per kilogram (mg/Kg) in the soil sample collected from GP4 at an approximate depth of 8 feet bgs. Since Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary butyl ether (MTBE), tertiary butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl ether (TAME), 1,2-dichloroethane (1,2-DCA), and ethyl dibromide (EDB) were not detected in any of the soil or groundwater samples collected from the site during the October 2005 subsurface investigation, mass calculations were not performed for these analytes. Soil and groundwater data are summarized in Tables 1 and 2, respectively.

Using soil analytical results from borings GP1 through GP5, which were advanced on October 28, 2005, ATC estimated the lateral extent of TPHd beneath the site as depicted on Figure 3.

An equation using the estimated areal extent, maximum concentration and estimated thickness was used to calculate the mass of TPHd remaining in soil. The areal extent of TPHd was assumed to be approximately 6 foot (r_1) by 6 foot (r_2) radii. An estimated impacted thickness of 6 feet ($r_3 = 3$) was assumed based on laboratory analytical data from GP4. Since TPHd was not detected in the soil sample collected from GP4 at an approximate depth of 12 feet bgs, ATC estimates the maximum thickness of TPHd impacted soil to be approximately 3 feet above and 3 feet below the soil sample collected from GP4 at approximately 8 feet bgs.

The calculation used to determine the most probable case scenario of affected soil is:

Mass = Volume in ft^3 $(4/3*pi*r_1*r_2*r_3)*28.31$ liters/ft^3*7.1 lbs/gallon*0.4536kg/lbs*conc max in (mg/Kg)*10^{-6} Kg/mg

Where the calculated volume is in cubic feet, r_1 and r_2 are the radii of affected soil area in feet, r_3 is on half the thickness of affected soil column in feet, and conc max is the maximum concentration in mg/Kg. The average weight of diesel fuel is assumed to be 7.1 lbs per gallon.

The total mass of TPHd remaining in the soil is estimated to be approximately 0.14 Kg. Mass calculations are provided in Appendix A.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the mass calculations, the estimated mass of TPHd in impacted soil beneath the site is estimated to be 0.14 Kg or 0.31 pounds. Since TPHg, BTEX, MTBE, TBA, DIPE, ETBE, TAME, 1,2-DCA, and EDB were not detected at the site during the October 2005 subsurface investigation, mass calculations were not performed for these analytes.

ATC recommends no further action at the site for the purposes of soil and groundwater investigation. Additionally, ATC recommends destroying the existing 12-inch diameter monitoring well.

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
Former GC & SP Trucking Facility
2006 L Street, Newman, California
Page 1 of 1

Sample ID	Date	(Reported in mg/Kg)												
		TPHd	TPHg	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB
GP1-8	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP1-12	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP1-15	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP2-8	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP2-12	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP2-14	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP3-12	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP3-14	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP3-16	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP4-8	10/28/05	13	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP4-12	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP5-8	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP5-12	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005
GP5-15	10/28/05	<5.0	<1.0	<0.005	<0.005	<0.005	<0.010	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005

Notes:

mg/Kg denotes milligrams per kilogram

TPHd denotes Total Petroleum Hydrocarbons as diesel analyzed by EPA Method 8015M

TPHg denotes Total Petroleum Hydrocarbons as gasoline analyzed by EPA Method 8015M

Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8260B

MTBE denotes methyl tertiary butyl ether analyzed by EPA Method 8260B

DIPE denotes di-isopropyl ether analyzed by EPA Method 8260B

TAME denotes tertiary amyl methyl ether analyzed by EPA Method 8260B

TBA denotes tertiary butyl ether analyzed by EPA Method 8260B

ETBE denotes ethyl tertiary butyl ether analyzed by EPA Method 8260B

1,2-DCA denotes 1,2-dichloroethane analyzed by EPA Method 8260B

EDB denotes ethyl dibromide analyzed by EPA Method 8260B

NS denotes not sampled

NA denotes not analyzed

< denotes not detected at or above stated method detection level

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
Former GC & SP Trucking Facility
2006 L Street, Newman, California
Page 1 of 1

Sample ID	Date	(Reported in ug/l)												
		TPHd	TPHg	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB
FW	10/28/05	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5
GP1	10/28/05	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5
GP2	10/28/05	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5
GP3	10/28/05	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5
GP4	10/28/05	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5
GP5	10/28/05	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

ug/l denotes micrograms per liter

TPHd denotes Total Petroleum Hydrocarbons as diesel analyzed by EPA Method 8015M

TPHg denotes Total Petroleum Hydrocarbons as gasoline analyzed by EPA Method 8015M

Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8260B

MTBE denotes methyl tertiary butyl ether analyzed by EPA Method 8260B

DIPE denotes di-isopropyl ether analyzed by EPA Method 8260B

TAME denotes tertiary amyl methyl ether analyzed by EPA Method 8260B

TBA denotes tertiary butyl ether analyzed by EPA Method 8260B

ETBE denotes ethyl tertiary butyl ether analyzed by EPA Method 8260B

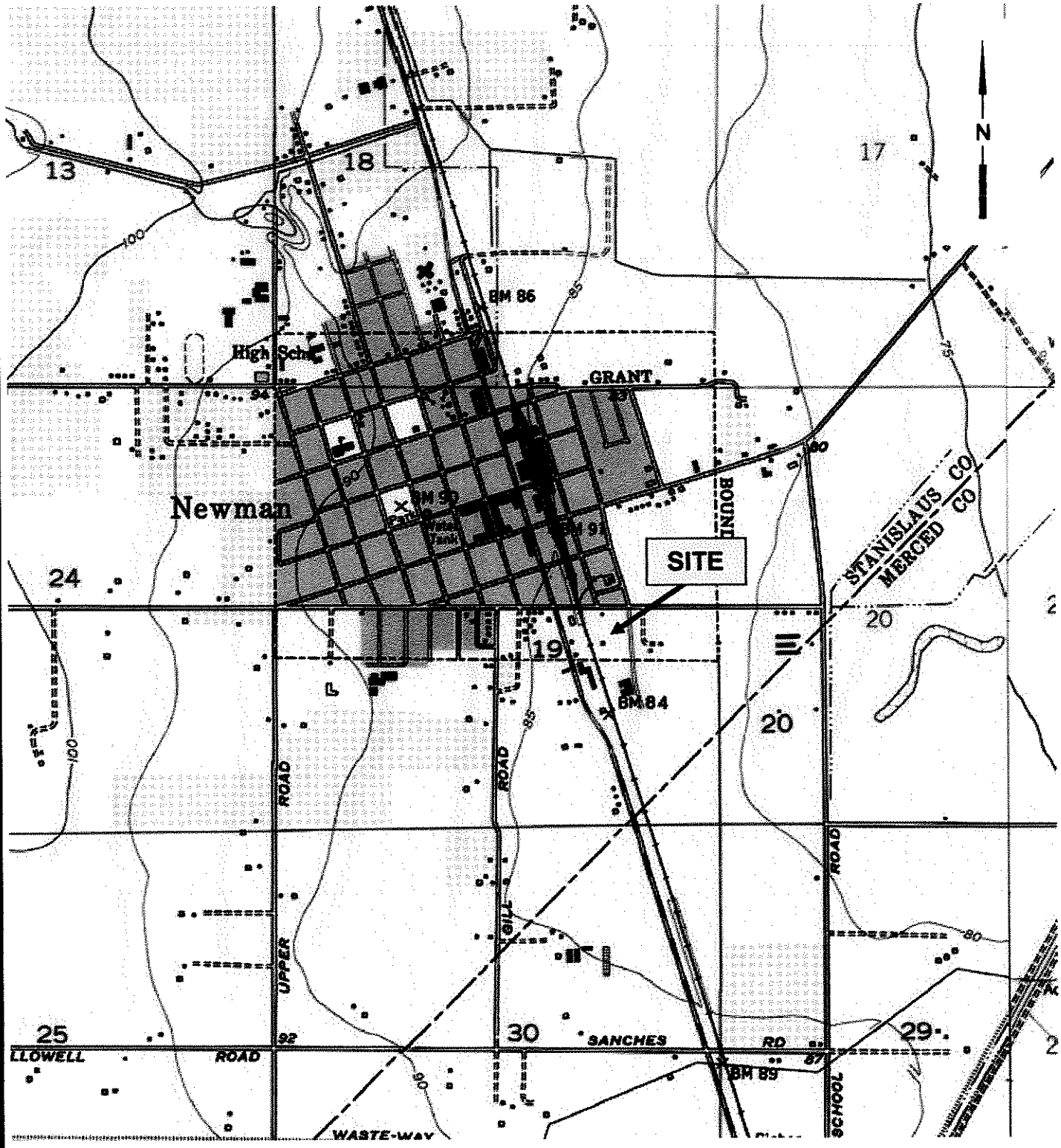
1,2-DCA denotes 1,2-dichloroethane analyzed by EPA Method 8260B

EDB denotes ethyl dibromide analyzed by EPA Method 8260B

NS denotes not sampled

NA denotes not analyzed

< denotes not detected at or above stated method detection level



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP NEWMAN QUADRANGLE, CALIFORNIA, DATED 1952, PHOTOREVISED 1971, AND PHOTOINSPECTED 1978.

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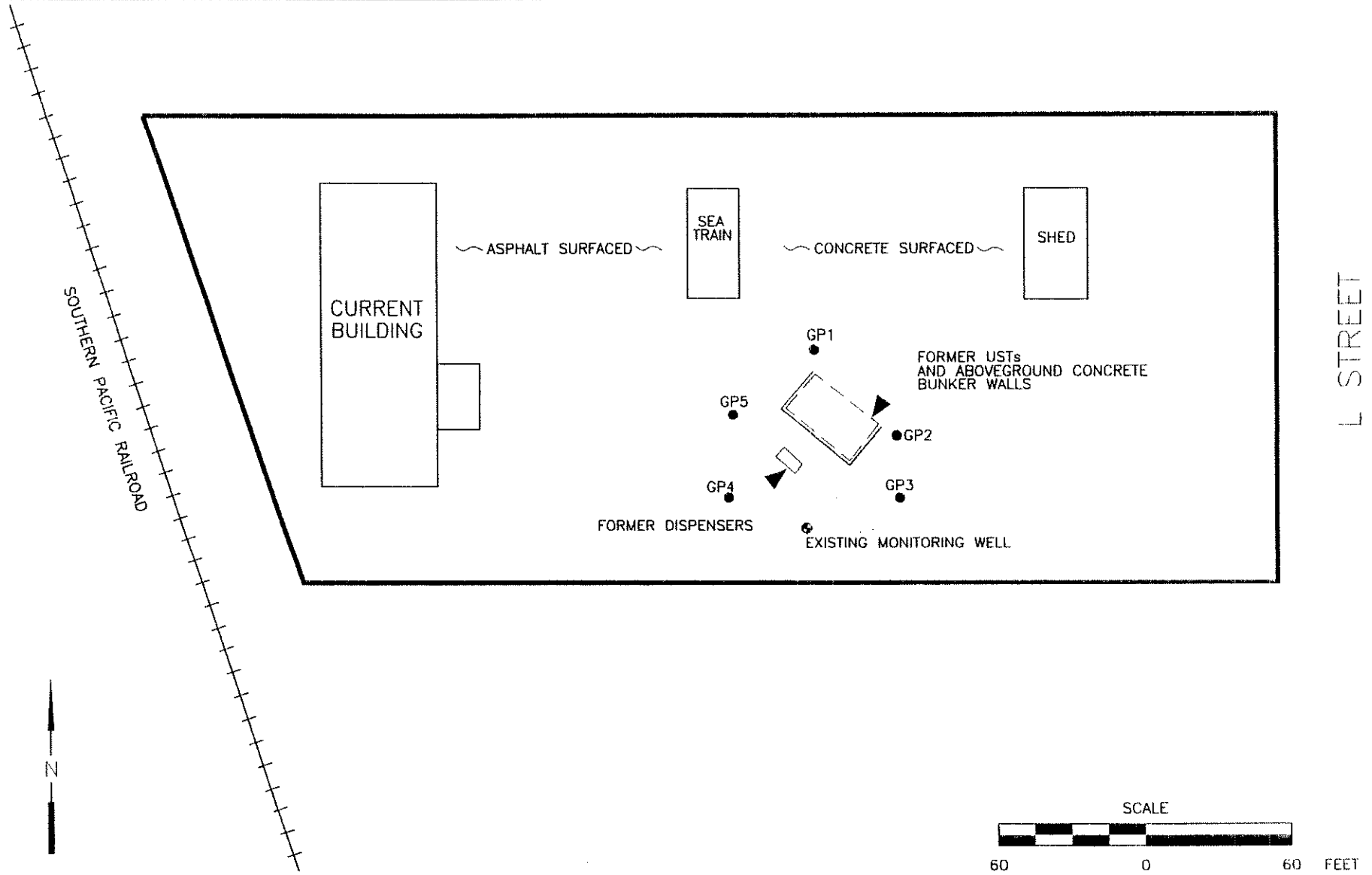
PROJECT NO: 54.24614.0001		
DESIGNED BY: NC	SCALE: 1:24,000	REVIEWED BY: JH
DRAWN BY: NC	DATE: 09/05	FILE: LOCATION

FIGURE 1

SITE VICINTY MAP

FORMER GC & SP TRUCKING
2006 L STREET
NEWMAN, CALIFORNIA



LEGEND:

- ◆ SITE WELL LOCATION
- ● SOIL BORING LOCATION

VATC ASSOCIATES INC

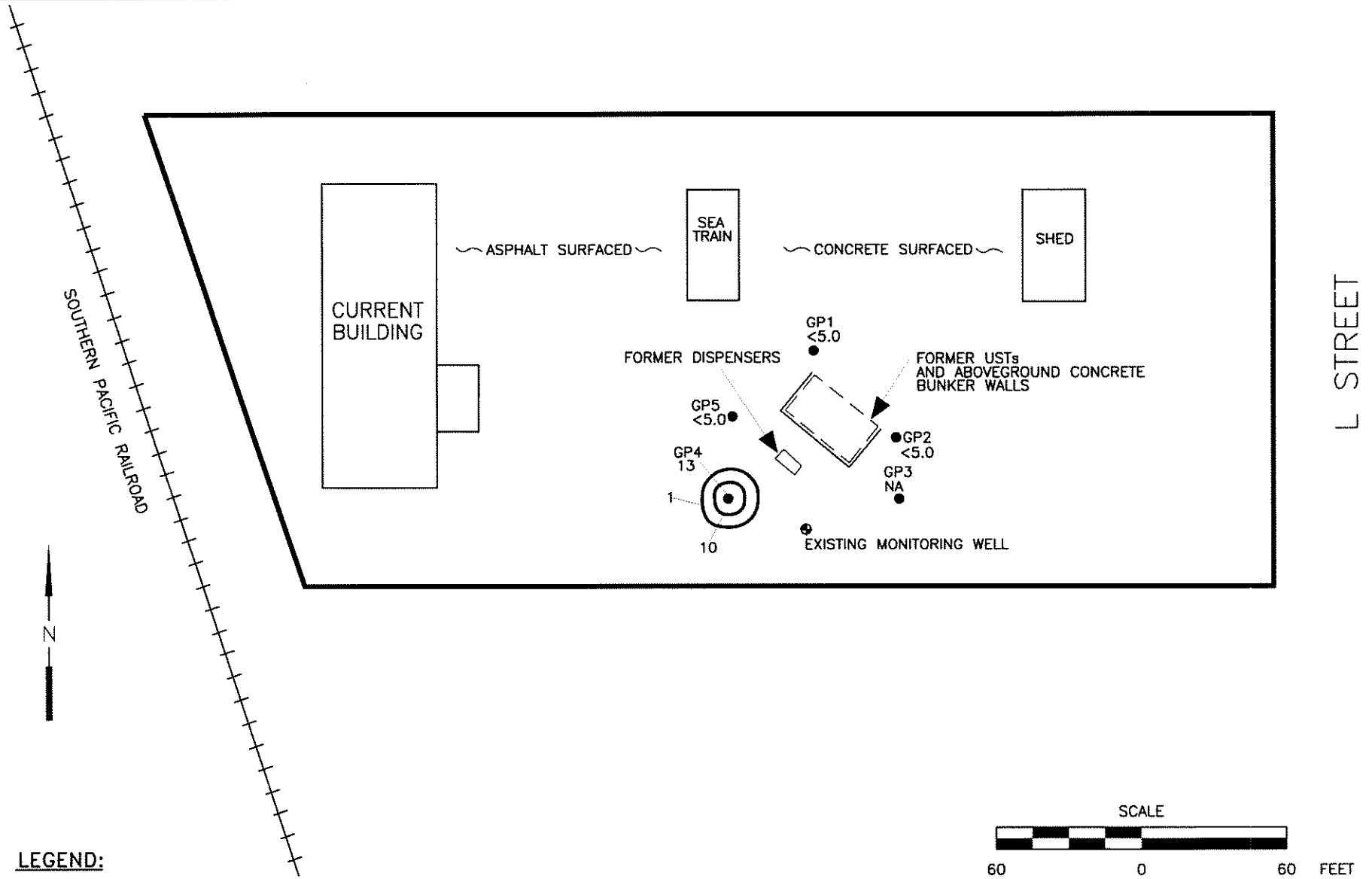
FORMER GC & SP TRUCKING
2006 L STREET
NEWMAN, CALIFORNIA

SITE PLAN

PROJECT #: 54.24614.0001

DECEMBER 2005

FIGURE: 2



LEGEND:

- ◆ SITE WELL LOCATION
- ● SOIL BORING LOCATION
- 13 CONCENTRATION OF TPHD IN MILLIGRAMS PER KILOGRAM (mg/Kg)
- NA SAMPLE NOT ANALYZED
- — LINE OF EQUAL CONCENTRATION

VATC ASSOCIATES INC.

FORMER GC & SP TRUCKING
2006 L STREET
NEWMAN, CALIFORNIA

ISOCONCENTRATION MAP OF TPHD IN SOIL AT 8 FEET BGS

PROJECT #: 54.24614.0001

FEBRUARY 2006

FIGURE: 3

APPENDIX A

Mass Calculations Soil

Soil		**1**	**2**	**3**	**4**	**5**			
	ft^3	(28.31 L/ft^3)	(1 Gal/3.7843L)	(7.1 lbs/Gal)	(0.4536 kg/lbs)	(Conc mg/kg)	(10^{-6}Kg/mg)	Value in (kg)	Value in lbs
TPHd	452	28.31	0.264	7.1	0.4536	13	0.000001	**0.14**	0.31

Note

Area of horizontal extent = 12' by 12'

Depth of plume is from 5 feet bgs to 11 feet bgs = 6'

$r_1 = 6$, $r_2 = 6$, $r_3 = 3$

Volume = $(4/3)*pi*r_1*r_2*r_3$

Volume calculated from 4/3*pi*6*6*3 = 452 cubic feet

Conversion Factors

1) 28.31 Liters per cubic foot
2) 1 gallon per 3.7843 liters
3) 7.1 pounds of diesel fuel per gallon
4) 0.4536 kilograms per pound
5) 0.000001 kilograms per miligram